



Chapter 16: Person In The Water Recovery



Overview

Introduction

Even the best of swimmers can become disoriented when unexpectedly falling into the water. Immediate action is of primary importance when a person falls overboard. Every second counts, particularly in heavy or cold weather. This chapter addresses man overboard and person in water (PIW) recovery procedures, as well as water survival skills. Lives depend on every crew member performing these procedures competently and effectively.

In this chapter

These items are discussed in this chapter:

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Coast Guard Boat Crew Seamanship Manual





Section A. Recovery Methods

Overview

Introduction

All crew members must be prepared when someone falls overboard. Rehearsing how to react is vital to a successful and safe recovery of the individual. Assume the person who is in the water is suffering from shock, may be unconscious, and possibly injured.

The information here is only a general guideline, as each boat and situation presents problems beyond the scope of this publication. A professional understands and rehearses each possibility remembering that the key to a successful rescue is preparation, practice, and alertness.

In this section

These items are discussed in this section:

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General Man Overboard Procedure

A.1. General

The action taken in the first few seconds after a crew member falls overboard decides the success of the recovery. An alert crew member can do much to save the life of someone who might otherwise drown. First actions should be swift and certain.

A.2. First sighting

If a person fell over the port side, the first crew member to realize someone had fallen overboard should follow these procedures:

Step	Procedure
1	Spread the alarm in a loud voice by repeatedly calling out,
	"MAN OVERBOARD, PORT SIDE (or STARBOARD)"
2	Throw a ring buoy with strobe light (or anything that floats) over
	the side towards the person in the water.
3	Maintain sight of, and continuously point (open handed), to the
	individual in the water while carefully moving to a position
	where you can be seen by the coxswain or operator. Give clear,
	loud verbal directions to the coxswain.

A.3. Coxswain or Operator actions

The coxswain would then push the memory button on the Loran-C or GPS receiver (if so equipped) to mark the exact position (datum) of the distress.

Use all possible means to identify the position (dead reckoning, visual landmarks, radar, etc.). Note the location on the chart so that the boat can return to the vicinity of the person in the water.

NOTE &

Where the correct equipment is available, a more precise position locked into the navigation receiver will be invaluable in determining datum.

A.4. Turning the boat around

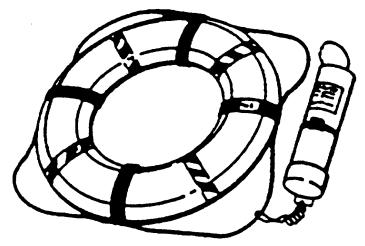
At the same time the position is being recorded, turn the boat in the direction the individual fell overboard (port or starboard) and simultaneously sound the danger signal (5 or more short blasts on the boat's whistle or horn). (See *The Approach* further in this Section.)



A.5. Throwing a flotation device

Throw a ring buoy with strobe light (or anything that floats) over the side towards the person in the water. It does not matter if the person is visible at this time or not. The person in the water may see the flotation device and be able to get to it. Additionally, the ring buoy (see Figure 16-1) or any floating object thrown over the side (if a ring buoy is not available) serves as a reference point (datum) marking the general location of the incident and for maneuvering the boat during the search.

Do not throw the floatable object(s) at the person overboard. It could cause further injury if it hits the individual. Throw the object so that it or its line can drift down to the person while avoiding fouling the line in the propeller.



Ring Buoy with Strobe Figure 16-1

A.6. Assign crew duties

Once a device is thrown, the coxswain will assign duties to each crew member.

- If weather conditions permit, a POINTER will be positioned on or near the bow of the boat.
- A RECOVERY/PICK-UP crew member will be assigned to prepare a heaving line to be used in retrieving the person from the water.
- A SURFACE SWIMMER will be made ready as needed, as well as another crew member on the tending line to the surface swimmer's safety harness whenever the swimmer is in the water.



A.6.a. The Pointer

The Pointer will visually search for the person overboard, and when located, will point to the person overboard at all times. The coxswain will guide on the Pointer's hand signals in maneuvering the boat for the recovery approach.

In smaller boats, anyone simultaneously can yell to the helm, keep their eyes on the person overboard, and throw something in the water. The larger the boat, the harder it becomes to do this and keep sight of the person overboard. Even given the maneuverability and short distances involved in smaller boats, sight of a head in the water can be quickly lost. The coxswain should ensure that the crew member keeping an eye on the person overboard is relieved of any other duties that could be distracting.

A.7. Crew briefing

When the coxswain is ready to commence the recovery approach, he must brief the crew on how the recovery will be made and whether it will be accomplished on the port or starboard side. The approach will be influenced by:

- wind.
- sea surf conditions,
- maneuverability of the boat, and
- maneuvering space restriction.

A.8. Alerting boats in the general vicinity

Sounding five or more short blasts on the sound signal, horn, or whistle alerts boats in the area that a danger exists (i.e., a man overboard is occurring). Boats in the vicinity may not be aware of what the signal means but at least they will realize something unusual is happening.

A.9. Pan Pan Pan

If the person overboard has not been located and immediately recovered and assistance of other boats is needed, transmit the emergency call signal Pan (pronounced PAHN) three times on channel 16 or 2182 kHz. Follow this with the boat's identification, position, and a brief description of the situation. Do not use "mayday." A boat uses a mayday call only when threatened by grave and imminent danger. After returning to datum and completing a quick scan of the area, if the PIW is not found, drop a datum marker and commence an initial search pattern. Continue the search until otherwise directed by the operational commander.



A.10. Informing the operational commander

When circumstances and time permits, the coxswain must notify the operational commander of the man overboard situation. This should be done as soon as possible after the occurrence.

A.11. Requesting additional assistance

Requests for additional assistance may be made to the operational commander by radio. Also, any craft near the scene may be requested by the coxswain to assist as needed.

A.12. Summary

The general person in the water recovery procedure described above applies whether the individual fell overboard from your boat or from another boat. These steps are in a sequence as it occurs in time:

Step	Procedure
1	Someone falls over the side.
2	The first crew member to observe the incident or the person overboard calls out "MAN OVERBOARD" and follows this exclamation with the side from which the event occurred or the person was sighted; then maintains sight of and continuously points to the individual in the water. • A crew member throws a ring buoy with strobe light over the same side that the person fell (or was sighted on) and in
3	 the general direction of the person in the water. Events happening at approximately the same time: The coxswain turns the boat in the direction indicated in the alarm, depresses the Loran-C or GPS receiver memory button (if this equipment is on the boat), sounds 5 or more short blasts on whistle or horn, and notifies the station at the earliest possible moment.
4	 The coxswain assigns crew member duties: The Pointer (or first person to see the member go overboard) moves forward near a pilothouse window, weather permitting, locates the person overboard and points to the location of the person at all times. The Recovery crew member makes preparation for the pickup.
5	The coxswain makes the recovery approach, briefs the crew as to how the recovery will be made and which side of the boat it will be made on. Based on existing conditions, the coxswain will select either a leeward or a windward approach.



The Approach

A.13. Basic approaches

The coxswain must select an approach that is suitable for the existing conditions. There are two basic approaches:

- A leeward approach (against the wind and current)
- A windward approach (with the wind and current)

A.14. Leeward approach

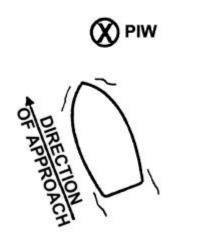
WARNING **%**

If the person in the water does drift aft of the boat, do not back down to effect the recovery. The propeller could injure the person.

Perform the leeward approach with the bow facing into the greatest force of oncoming resistance at the time of pickup. (See Figure 16-2.) This may be the wind, current, seas, or any combination of the three. There are times when the wind and current are from different directions. Select the heading which will best ease the approach. The coxswain must also balance the effect of any swell that might be present. The approach must be made rapidly but as the boat nears the person you must slow the boat and reduce your wake enough to where a short burst backing down stops your headway. The person in the water should be next to the recovery area on the boat and the boat should be dead in the water. Place the engines in neutral and, when the person overboard is alongside, have a crew member make the recovery. Make all pick ups into the prevailing weather and sea conditions. Take care not to overrun the person overboard or to have so much headway on that the boat drifts beyond the person overboard. If the person in the water does drift aft of the boat, do not back down to effect the recovery. The propeller could injure the person.







Placing Person in the Water on Leeward Side of Boat on Approach Figure 16-2

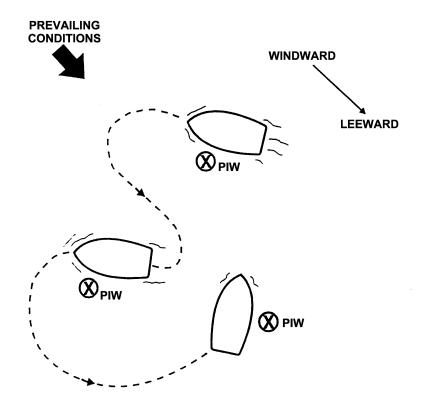
A.15. Windward approach

Perform the windward approach with the wind coming from behind the boat. Use the windward approach when the person overboard is in a confined space or a leeward approach is impossible. However, avoid a situation where the boat can not turn into the wind due to superstructure or bow sail area ("in irons"). The operator must maneuver into a position upwind and up current from the person overboard, place the engine in neutral, and drift down to the person. Ensure that the boat drifts so it places the person overboard along the "recovery' side but do not allow the boat to drift over the person.

A.16. Windward to leeward of multiple persons

Depending upon skill and experience, a combination of the windward and leeward approaches may be necessary. One instance may be in the case of recovering multiple persons in the water. (See Figure 16-3.)





Windward to Leeward Approach of Multiple Persons in the Water Figure 16-3

A.17. Stopping immediately

There may be instances when stopping the boat and allowing the person overboard to swim back to the boat, or at least to reach the tethered floating object is the most appropriate action. Especially if the boat can be stopped quickly after the person falls overboard.

A.18. Quick turn

The boat can be turned in the quickest time with full rudder and full speed. The turn can be achieved with a short turning diameter on twin prop boats by backing the inboard propeller. Whether single or twin propeller, the coxswain will slow the boat on the final approach such that the boat will nearly be DIW (dead in the water) when the person in the water comes abeam.



A.19. Stop pivot return

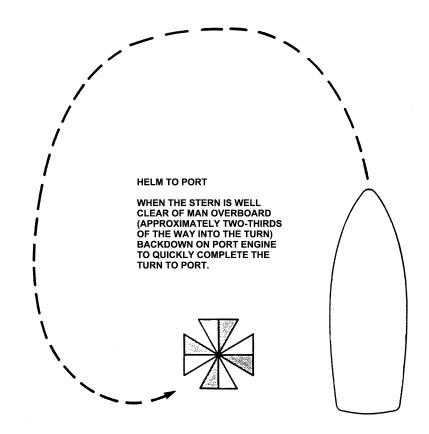
Another option, particularly in a restricted waterway, is to stop, pivot/back and fill, then return to the PIW. The turning and backing characteristics of the boat and the prevailing wind and sea conditions will dictate how the approach is made. The coxswain will maneuver the boat to the weather side of the person in the water so that the boat is set by the wind or seas toward the person rather than away.

A.20. Destroyer turn

Except in a narrow channel, make the turn to either side that permits the tightest turn, in this case to port, to move the stern of the boat away from the person overboard. This maneuver can be modified for use by twin propeller boats. Twin propeller boats are pivoted by putting one engine ahead and the other in reverse. With a single propeller boat put the rudder hard over with the engine full ahead. (See Figure 16-4.)

Step	Procedure
1	Make the turn to either side that will permit the tightest turn for
	the boat.
2	Continue making a complete turn, coming around and
	approaching the person that fell overboard with the boat's bow
	directly into the wind/current.
3	Once pointed toward the person, proceed rapidly until close.
4	Then make a slow and deliberate approach to the person, coming
	to a stop when alongside.





Destroyer Turn Man Overboard, Port Side Figure 16-4

A.21. Approaching in severe weather conditions Severe conditions may dictate that the approach be made from leeward with the bow dead into the seas and/or wind in order to maintain control of the boat. In severe conditions, particularly aboard single propeller boats, this will test the experience and skill of the coxswain. (*See Heavy Weather Addendum - Person in the Water* for more information.)

NOTE &

Never have the propeller turning when the person overboard is next to the boat. If you have to add power and maneuver with the person in the water in close proximity to the boat, turn the bow toward the person, swinging the stern and propeller(s) away and at a safe distance.



Sailboat Approaches

A.22. Giving commands

During periods of distress, such as a person in the water, take special care with the remaining crew members to assure their safety. Give clear commands to ensure that crew members keep clear of the boom.

A.23. Moderate wind, boat on reach

Carry out these preliminary procedures:

- pass the alarm
- throw flotation device
- point to the person in the water

A.23.a. Alter the course to beam reach

Alter the course to beam reach by doing the following:

Step	Procedure
1	Release the shaft lock.
2	Maintain silence, except the relative bearings given by the
	pointer.
3	Prepare the gybe.
4	Prepare to drop the headsail.
5	Start the engine (if so equipped).
6	Check for lines over the side.

A.23.b. Gybe

If the conditions permit:

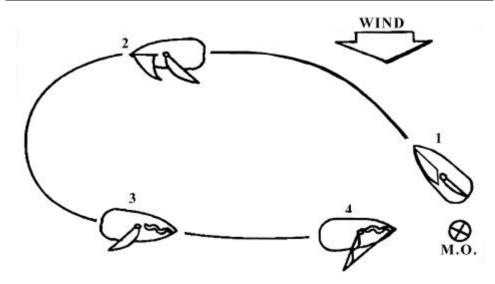
Step	Procedure	
1	From the turning point, divide the knot minutes by the average	
	speed on the return leg.	
	Example: 3 knots average speed, divide 12 by 3 equals 4	
	minutes for this leg.	
2	Drop the headsail.	
3	Rig the preventer on boom and rig the line through the block.	



A.23.c. Weather side approach

Approach to the weather side of the person in the water (See Figure 16-5).

Step	Procedure	
1	Rig the ladder, slack the headsail.	
2	Tighten the boom preventer, use the engine if possible.	



Sailboat Approaching Weather Side Figure 16-5

A.24. Heavy wind/sea approaches

The procedures for heavy wind/sea, boat on beam reach or boat close hauled approach are the same as above except that it may be easier to tack with headsail up.

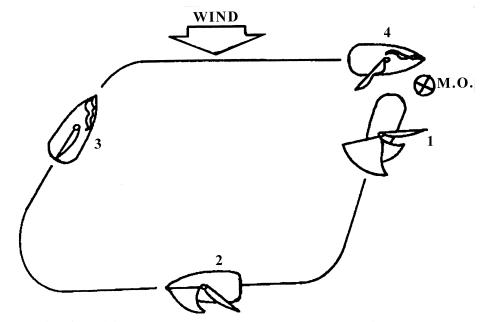
approaches

A.25. All condition All conditions, boat on a broad reach or run approach:

Step	Procedure
1	Carry out the preliminary procedures for person in the water recovery situations:
	• pass alarm
	• throw PFD
	• point



Step	Procedure	
	• commence a navigation plot	
	• lower blooper and spinnaker in that order (if they are	
	deployed)	
2	Alter course to a beam reach and tack when possible.	
3	Continue upwind, close hauled, until roughly abeam of the	
	person in the water (See Figure 16-6).	
	• Fall off the wind.	
	• Drop the headsail, rig the preventer, and rig the line	
	through block.	
4	Make the approach as discussed in the preceding paragraphs.	



All Conditions, Boat on a Broad Reach or Run, Approach Figure 16-6



Approaching in Low Visibility

A.26. General

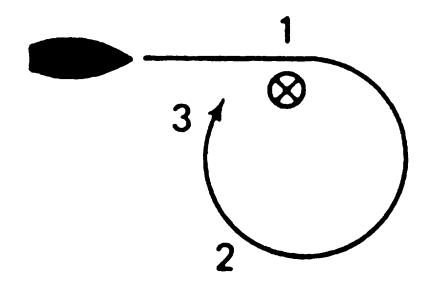
During low visibility and night operations when a crew member sees another crew member go over the side the same general procedures apply. The crew member seeing the person go overboard tosses a flotation device with a strobe (or any other light) attached, if available. They also continue to observe and point to the person overboard as long as possible. The coxswain presses the memory button on the Loran-C or GPS receiver, if so equipped, sounds signals, and goes to the datum using one of the following turns.

A.27. Anderson turn

An advantage of the Anderson turn is that it is the fastest recovery method. A disadvantage is that it is not meant for use by a single propeller boat. The Anderson turn involves the following:

Step	Procedure
1	Put the rudder over full in the direction corresponding to the side
	from which the person fell. Go ahead full on the outboard
	engine only.
2	When about $\frac{2}{3}$ of the way around, back the inboard engine $\frac{2}{3}$ or
	full.
3	Stop engines when the person overboard is within about 15° of
	the bow.
4	Ease the rudder and back the engines as require to attain the
	proper final position. (See Figure 16-7.)





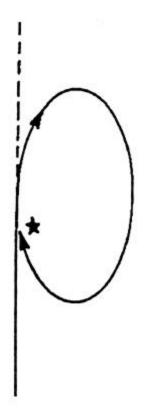
The Anderson Turn Figure 16-7

A.28. Race track turn

The final straight leg approach of the Race track turn helps for a more calculable approach. The race track turn involves the following:

Step	Procedure
1	Put the rudder over full in the direction corresponding to the side
	from which the person fell, going ahead full on all engines.
2	Use full rudder to turn to the reciprocal of the original course.
3	Steady up on this course for a short distance, then use full rudder
	to turn to the person overboard. (See Figure 16-8.)





The Race Track Turn Figure 16-8

A.29. Williamson turn

If an individual falls overboard during periods of darkness or restricted visibility and the exact time of the incident is unknown, a maneuver known as the Williamson turn should be used to search for the person overboard. The advantage of the Williamson turn, when properly executed, is that it will position the boat on a reciprocal cause on its exact original track. This allows the search to commence on the track where the victim fell over, not from a parallel track. Of course, as soon as the alarm is spread the general person overboard procedure will be initiated.

A.29.a. Procedure

There are four steps in performing the Williamson turn:

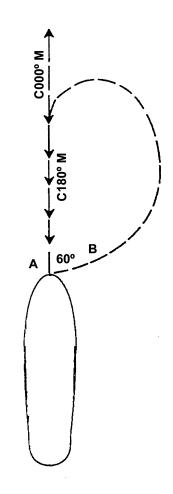


Step	Procedure	
1	Mark the original course when the alarm was initially spread. Put over a ring buoy strobe or other float to work datum.	
2	Alter the course 60° to port or starboard from the original course. It does not matter which direction is chosen. Naturally, if turning to starboard, 60° will have to be added to the original course to know when the correct number of degrees have been transited. If turning to port, the 60° will be subtracted from the initial course.	
3	The turn is actually executed while the first two steps are in progress. In this step, the reciprocal course must be calculated from the original course. That is to say, a new course which runs in the exact opposite direction (180°) from the original course must be figured.	
4	Once the correct reciprocal has been calculated and the compass reaches the '60° mark' after turning off the initial course, shift the rudder in the opposite direction from the 60° turn and come to the reciprocal course.	

A.29.b. Starboard turn

Figure 16-9 shows how the Williamson turn would look if the 60° turn was to starboard. Point 'A' represents the initial course and is illustrated as 000°. At Point 'B', the compass reads 060°. At this point, the reciprocal course (180°) has been figured. When the compass reaches the 060° mark, the rudder is shifted to the opposite direction (port) of the 60° turn and the boat comes around to the reciprocal. When the 180° course is marked, the boat will continue on this new course and if the person overboard has not been sighted by this time, the boat crew will conduct a search for the victim along this heading. If individual is not located, the boat should proceed along the track to a point where the member was last known to be aboard. At this point a second datum marker (ring buoy, fender, etc.) is deployed.





The Williamson Turn Figure 16-9

A.29.c. Maintain speed

Do not change speed during a Williamson turn. Speed changes may bring the boat around to the reciprocal course in a different position than the line of the initial course. The danger is that the person overboard may be too far away for you to locate. The idea behind the Williamson turn is to bring the boat around so that it is on the exact line of the original course but in the opposite direction.

A.29.d Calculating the 60°turn

Once the person overboard alarm is spread, the coxswain turns the boat 60° from the original course to either port or starboard.



IF	THEN		
the turn is to	the 60° must be ADDED to the or	iginal course:	
starboard,	Original course marked when alarm was sounded		
		080°	
	Starboard turn	<u>+ 060</u> °	
	Shift rudder when compass reads	140°	
the turn is to port,	the 60 degrees must be SUBTRACTED from the		
	original course:		
	Original course marked when alarm was sounded		
		080°	
	Port turn	<u>- 060</u> °	
Shift rudder when compass reads 020°		020°	

A.29.e. Calculating the reciprocal of a given course

Calculating the reciprocal of a given course is done by either adding 180° to the given course or subtracting 180° from the given course. To add or to subtract depends on whether the given course was less than 180° or more than 180° .

A.29.f. Calculating the reciprocal of a course less than 180°

If the original course is less than 180°, add 180° to the original course to get the reciprocal.

000°
<u>+ 180</u> °
180°
080°
<u>+ 180</u> °
260°

A.29.g. Calculating the reciprocal of a course more than 180°

If the original course is more than 180° , subtract 180° from the original course to get the reciprocal.

Example 1	
Original course	200°
Subtract 180°	<u>- 180</u> °
Reciprocal course	020°



Example 2

Original course 320° Subtract 180° -180° Reciprocal course 140°

A.30. While towing

If during a towing evolution a man overboard emergency occurs, boat crew members should be aware of the severity and danger of the situation. Several problems can occur when dealing with a simultaneous towing and man overboard situation.

A.30.a. Vessel maneuverability

Boat Towing Astern:

NOTE &

 A decrease in speed could cause the towed boat to overrun the towing boat.

Tripping occurs more frequently when the tow is larger than the towing boat. • Tripping can occur when a boat is towed sideways by an opposing force on the towline. If the towline is out of alignment (not in line) and pulls sideways, the towing boat will heel over, often beyond its ability to right itself.

WARNING 💖

The closer the towing bit is to amidships (if so equipped), the more serious the danger.

Boat Towing Alongside:

• Extra weight slows the ability to stop and makes it difficult to turn away from the side to which the tow is secured.

A.30.b. Weather conditions

Current, wind, sea, or swell from astern can cause yawing and add to the problem of the tow overrunning the towing boat.

Current broadsides to the tow create difficulty in holding the tow due to side slip, causing the tow to yaw.

NOTE &

Bar or inlet conditions will compound all these problems.



A.30.c. Preplanning

Considering the number of potential problems that can occur, the operator should carefully assess all possible situations and conditions to pre plan steps to take in case of a man overboard emergency.

A.30.d. Additional procedures

If a person falls overboard during a towing evolution, follow the steps discussed earlier in this section. The following are additional considerations to take which apply to man overboard situations specific to towing evolutions.

CAUTION!

Slow calculated moves are better than a "knee jerk" response.

- If another boat is nearby, get that boat to make the pickup.
 - Since tows are made at slow speeds, it may possible that the tow can make the pickup. The towing boat should aid in any way possible.
- If towing astern, advise the towed boat of the man overboard situation, and have the people on the tow assist in looking for the person in the water.
 - Be sure to advise the people on the tow that there is a real danger of tripping or broaching if the towed boat shears away violently from alignment.
 - It might be necessary to drop the tow in order to perform a man overboard operation. Consider the environmental factors and water traffic when/if dropping the tow to minimize the possibility of a hazardous situation. Have the tow anchored.
- Never forget that the man overboard may be injured if hit by the tow.
 - A person who has fallen off the bow or side can be seriously injured or killed by the propellers. Any turns made should move the stern away from the person in the water.



A.30.e. Towing alongside

When towing a boat alongside, follow the guidelines discussed in earlier in this section. Keep in mind that towing alongside allows more freedom to turn. Consider the following points:

- Engines, while useful, will not respond as usual. Remember, the engines were designed to propel one boat, not two.
- When making a turn, turn slowly towards the side with the tow and pivot on the tow. Be careful not to swamp the tow.
- The best approach is to make the pickup on the free side since the operator can better observe the person in the water and the pickup.
- Again, consider dropping the tow.

The procedures will remain the same, whether the person falls from the tow or towing vessel.

A.30.f. Towing astern

If the person falls overboard from the tow, follow the procedures outlined above. Realize that if there is no boat to help, the towing boat will have no other choice but to drop the tow.

A.30.g. Summary

Always consider the effect of each action on all the boats and persons involved. **People before property**. People's safety is the number one priority. People on board the tow are just as important as the person in the water. Consider if the towed boat is not manned, drop the tow! Always inform all people and vessels involved of every situation.

The best way to handle a man overboard emergency is to prevent one from happening. Be aware of the crew: know where they are and what they are doing.



Approaching Under Surf Conditions

A.31. General

Recovering a person overboard in heavy weather requires special precautions beyond the routine described in the section on general person overboard procedure. The general procedure is put into effect as soon as the alarm is sounded. The Auxiliary is not authorized to operate in surf conditions. (See *Heavy Weather Addendum - Persons Recovery* for more information.)



Recovery

A.32. General

Recovery techniques for a person in the water are the same for any distress -- your own crew as a man overboard, passengers from a ditched aircraft, fisherman from a sinking boat, someone washed off of a jetty, or whatever emergency.

A.33. Recovery methods

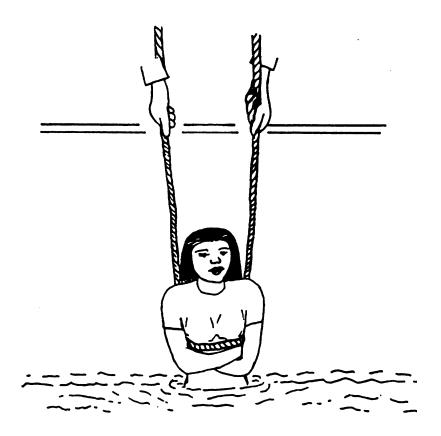
The condition of the person in the water will dictate the type of recovery procedure used. Once the condition of the person in the water can be determined, that is, conscious, unconscious, or injured, the coxswain will select one of the procedures below and assign crew member duties accordingly. Generally, the pickup is completed at the lowest point of freeboard and away from the propellers.

A.34. Person overboard is uninjured and conscious

Recovery method when the person is conscious and able to move freely in the water.

Step	Procedure
1	Upon command of the coxswain, a crew member casts out a
	heaving line or a float line to the person in the water.
2	The person will hold on to the line and be hauled in for recovery
	by the crew member tending the line.
3	If the person needs assistance to board the boat, two crew members could be used to pull the person up out of the water and onto the boat by each placing a hand under the person's armpit (use the other hand to hold onto the boat); or the use of a recovery strap (See Figure 16-10.) or a boarding
	ladder could be used if available.





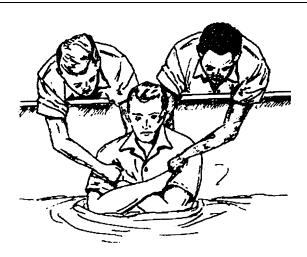
Person in the Water Recovery Strap Figure 16-10

A.35. Additional procedures

The construction of some boats allows the rescue team to reach the victim at the surface of the water.

- The boat crew members should physically pick the person straight up out of the water to a sitting position on the gunwale (gunnel) (see Figure 16-11).
- Be careful not to drag the person's back across the rail.





Recovering the Person in the Water at the Surface of the Water Figure 16-11

If only one person is available to lift an uninjured person from the water:

Step	Procedure
1	Position the victim facing the boat with both arms reaching upwards.
2	Boat crew member should reach down with arms crossed and grasp victim's wrists.
3	Boat crew member should lift the victim straight out of the water while simultaneously uncrossing the arms. This should extract the victim from the water in a corkscrew motion.

If the freeboard of the boat is too high to recover the victim safely:

- use a line under the armpits in a horse collar fashion;
- the line should cross the chest, pass under each arm, and up behind the head.
- Use padding for comfort, if available.

A person is light in the water due to buoyancy; however, once free from the water the person becomes "dead weight." Keep this in mind and be especially careful when recovering injured persons.



A.36. Person in the water is unconscious or injured

The procedure in the event the victim is unconscious or injured is slightly more complicated. The coxswain will designate one of the crew members as a surface swimmer.

Step	Procedure	
1	The surface swimmer will don a wet suit, dry suit with a PFD	
	(which one depends upon the water temperature and the	
	weather), a helmet, and a swimming harness with tending line.	
	(See Figure 16-12.)	
2	For quick deployment, the line should be coiled and attached to	
	the back of the swimmer's harness.	
3	When the surface swimmer has reached the unconscious or	
	injured victim and has obtained a secure hold on the person, the	
	crew member tending the harness line will haul both back to the	
	boat.	

A flotation equipped Stokes Litter is employed to recover a person only if that person is seriously injured and seas are calm. (See Figure 16-13.)

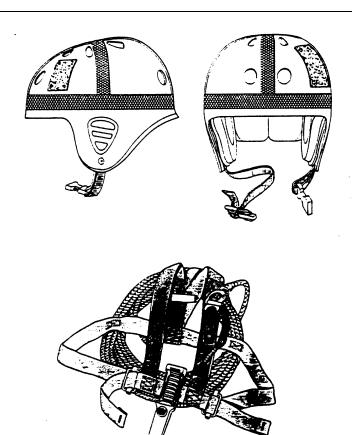
A.36.a. Surface swimmer

NOTE &

Auxiliary does not have surface swimmers.

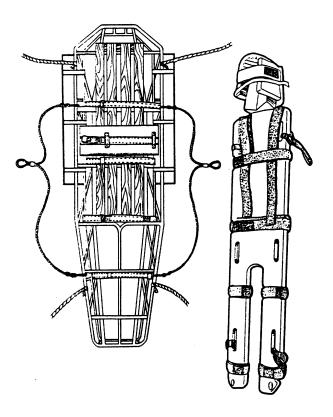
Surface swimmers are any swimmers not trained as rescue swimmers. Their training is accomplished through Personnel Qualification Standard (PQS). They are deployed from floating units, piers, or the shore. A surface swimmer must wear a PFD with dry suit or wet suit and a swimming harness with a tending line. Another crew member will tend the harness whenever the swimmer is in the water.





Surface Swimmer's Helmet and Harness Figure 16-12





Stokes Litter and Miller Board Figure 16-13

A.37. Requesting a rescue swimmer

The primary mission of the helicopter rescue swimmer is to provide rotary wing stations with the capability of deploying a properly trained and conditioned person to assist persons in distress in the marine environment. The rescue swimmer must have the flexibility, strength, endurance, and equipment to function for 30 minutes in heavy seas, and the skills to provide basic pre-hospital life support for the rescued individual(s). The rescue swimmer's Emergency Medical Technician (EMT) skills may also be used during other SAR cases in which the swimming ability is not required.

If medical assistance is needed, the parent station shall be advised. The station may arrange for medical assistance on-scene or at an agreed upon rendezvous point.



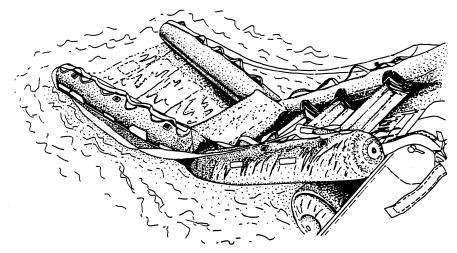
A.38. Multiple person in the water recovery

For multiple persons in the water, the question becomes which person in the water is recovered first? The answer to this requires the coxswain's best judgment. An accurate assessment once on the scene will dictate the coxswain's response. Consideration should be given to the following:

- 1. Are one or more persons in the water injured?
- 2. Which persons in the water have on PFDs and which do not?
- 3. How close are the persons in the water to the beach or jetty?
- 4. How old are they and what is their physical condition?

A.39. Multiple Person in the Water Recovery (MPR) System The Multiple Person in the Water Recovery (MPR) System is an inflatable rescue device designed to assist in the retrieval of multiple survivors from the water to the deck of a rescue vessel. (See Figure 16-14.) The MPR was specifically designed for use on the 41' UTB. When installed and operated correctly, the MPR will inflate in less than 10 seconds and be ready for use.. The unique design of this system allows rescuers to descend the ramp to assist in the recovery of multiple persons in the water or allows multiple persons in the water to easily climb from the water.

Specific instructions will be provided at the station to 41' UTB crew members on use and operation of the MPR system.



Multiple Person in the Water Recovery System Figure 16-14



Section B. Water Survival Skills

Overview

Introduction

In the event a crew member enters or ends up in the water due to an emergency, survival procedures should be pre-planned. By doing so, the chances for a successful rescue are increased.

This section addresses the survival techniques that will greatly increase the survival for a person in the water. Never forget that a PFD is the best insurance for survival.

In this section

These items are discussed in this section:

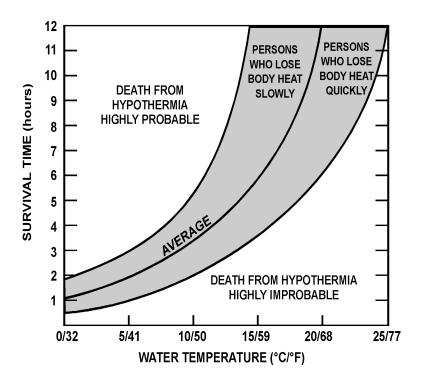
Topic	See Page
Cold Water Survivability	16-34
Survival Techniques	16-36



Cold Water Survivability

B.1. Cold water survival

The length of time a person can stay alive in cold water depends on the temperature of the water, the physical condition of the survivor, and the action taken by the survivor. Figures 16-15 and 16-16 illustrate the relationship between an uninjured victim's activity, water temperature, and estimated survival time. Swimming typically reduces a person's chance of survival due to more rapid loss of body heat.



Water Chill and Hypothermia Figure 16-15



How Hypothermia Affects Most Adults			
Water Temperature	Exhaustion or	Expected Time of Survival	
°F (°C)	Unconsciousness		
32.5 (0.3)	Under 15 min.	Under 15 to 45 min.	
32.5 to 40 (0.3 to 4.4)	15 to 30 min.	30 to 90 min.	
40 to 50 (4.4 to 10)	30 to 60 min.	1 to 3 hrs.	
50 to 60 (10 to 15.6)	1 to 2 hrs.	1 to 6 hrs.	
60 to 70 (15.6 to 21)	2 to 7 hrs.	2 to 40 hrs.	
70 to 80 (21 to 26.7)	2 to 12 hrs.	3 hrs. to indefinite	
Over 80 (26.7)	Indefinite	Indefinite	

Survival Times vs. Water Temperatures Figure 16-16

B.2. Critical factors

Time is critical when forced to enter cold water. The loss of body heat is one of the greatest dangers to survival. Critical factors that increase the threat of hypothermia and other cold water injuries include prolonged exposure to cold water temperatures, sea spray, air temperature, and wind chill.



Survival Techniques

B.3. Preventative measures

There are several preventative measures that can be used to increase the chances for successful cold water survival including:

NOTE &

For more information on cold water survival see **COMDTPUB** P3131.6, "A Pocket Guide to Cold Water Survival."

- 1. Put on as much warm clothing as possible, making sure to cover head, neck, hands and feet.
- 2. If the hypothermia protective clothing does not have inherent flotation, put on a PFD.
- 3. Avoid entering the water if possible. If it is necessary to jump into the water, hold elbows close to your sides, cover nose and mouth with one hand while holding the wrist or elbow firmly with the other hand.
- 4. Before entering the water, button up clothing, turn on signal lights (only at night), locate your survival whistle and make any other preparations for rescue.

B.4. Water survival skills

There are water survival skills that should be utilized to increase the chances for surviving cold water immersion including:

- 1. Immediately upon entering the water, become oriented to the surrounding area. Try to locate your sinking boat, floating objects, and other survivors.
- 2. Try to board a lifeboat, raft or other floating platform as soon as possible to shorten the immersion time. Body heat is lost many times faster in the water than in the air. Since the effectiveness of the insulation worn is seriously reduced by being water soaked, it is important to be shielded from wind to avoid a wind-chill effect. If able to climb aboard a survival craft, use a canvas cover or tarpaulin as a shield from the cold. Huddling close to the other occupants in the craft will also conserve body heat.
- 3. While afloat in the water, DO NOT attempt to swim unless it is necessary to reach a fellow survivor or a floating object which can be grasped or climbed onto.

Unnecessary swimming will pump out any warm water between the body and the layers of clothing and will increase the rate of body-heat loss. Also, unnecessary movements of arms and legs send warm blood from the inner core to the outer layer of the body resulting in a rapid heat loss.



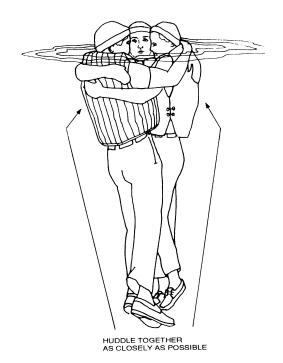
4. The body position assumed in the water is very important in conserving heat. Float as still as possible with legs together, elbows close to your side and arms folded across the front of your PFD. This is called the HELP (Heat Escape Lessening Position) and minimizes exposure of the body surface to the cold water. Try to keep head and neck out of the water (see Figure 16-17). However, if you're wearing a Type III PFD, or if the HELP position turns you face down, bring your legs together tight and your arms tight to your sides and your head back.

Another heat conserving position is to huddle closely to others in the water making as much body contact as possible. A PFD must be worn to be able to maintain these positions in the water (see Figure 16-18).





Single Person in the Water Figure 16-17



Multiple People in the Water Figure 16-18



- 5. Avoid drown-proofing in cold water. Drown-proofing is a technique where you relax in the water and allow your head to submerge between breaths. It is an energy saver in warm water when a PFD is not worn. The head and neck are high heat loss areas and must be kept above the water. That is why it is even more important to wear a PFD in cold water. If a PFD is not worn, tread the water only as much as necessary to keep your head out of the water.
- 6. Keep a positive attitude about your survival and rescue. This will extend your survival time until rescue comes. A will to live does make a difference.

